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Part 43:
Manufacturing flow management data: Data model for flow monitoring and manufacturing data exchange

Systèmes d'automatisation industrielle et intégration — Données de gestion de fabrication industrielle —

Partie 43: Données de gestion des flux de fabrication: Modèle de données pour suivi des flux et échange des données de fabrication

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Contents

Figures

Foreword

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ISO 15531-43 was prepared by Technical Committee ISO TC184/SC4, *Industrial automation systems and integration*, Subcommittee SC4, *Industrial data*.

A complete list of parts of ISO 15531 is available from the Internet:

http://www.tc184-sc4.org/titles

Introduction

The information generated about the manufacturing process of an industrial product is very important for the life cycle of this product, notably in a context of sustainable development. Manufacturing may be defined as the transformation of raw material or semi-finished components leading to goods production. Manufacturing management is the function of directing or regulating the flows of goods through the entire production cycle from requisitioning of raw materials to the delivery of the finished product, including the impact on resources management.

A manufacturing management system manages the flow of information and materials through the whole production chain, from suppliers, through to manufacturers, assemblers, distributors, and sometimes customers.

The relations among those partners may be identified and structured in an electronic form with a view to facilitating electronic exchanges. Information handled during these exchanges is identified, modelled and represented in such a way that may be shared by a maximum of partners through the usage of standards for product and manufacturing data modelling.

The production planning functions within the supplier plants are assumed to have strong relationships with the master production scheduling functions of the main plant, which shares information with them, on the likely pattern of the future demands to allow suppliers to plan in turn their production. On a day-to-day basis, the operational planning system of the main plant sends orders to the suppliers to ensure the availability of components, sub-assemblies and others, such as resources needed for its manufacturing and assembly process.

ISO 15531 addresses the type of information described above. It is does not standardise the model of the manufacturing process. The aim of ISO 15531 is to provide a standardised data model for representing manufacturing management data. Its purpose is to facilitate the integration between the numerous industrial applications by means of common, standardised software that is able to represent these three sets of data.

ISO 15531 is organised as a series of parts, each published separately. The parts of ISO 15531 fall into the following series: production data for external exchange, manufacturing resources usage management data, time model management and manufacturing flow management data.

This part of ISO 15531 addresses the representation of data related to manufacturing flow and process management, through the development of a data model of the manufacturing flows and processes. Particular attention has been paid in the development of this part of ISO 15531 to the relation with the other standards developed in ISO TC184/SC4, such as ISO 10303, ISO 13584, ISO 15926. In addition to the fact that this part of ISO 15531 is developed using EXPRESS language (see ISO 10303-11: 2004) Edition 2, it makes extensive use of several constructs of ISO 10303-41, and references ISO 13584 dictionaries.